

PATENT



Attorney Docket No. AFFY-003/25US

Application No. 10/694,536

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Stephen A. FODOR *et al.*

Application No.: 10/694,536

Group Art Unit: 1634

Filed: October 28, 2003

Examiner: Jeanine A. Goldberg

For: Arrays for Detecting Nucleic Acids

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**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,  
Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97  
and 1.98.

- [x] Pursuant to 37 C.F.R. §1.98, copies of documents 53-67, 70-77, 80, 84, 86, 87, 92, and 93 cited in the attached Form PTO-1449 are enclosed.
- [x] Copies of the remaining publications listed on the attached Form PTO-1449 are not being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos.:
  - 09/768,626, filed January 25, 2001 (now US Patent No. 6,576,424);
  - 09/670,563, filed September 27, 2000 (now US Patent No. 6,451,536);
  - 09/362,089, filed July 28, 1999 (now US Patent No. 6,440,667);
  - 09/056,927, filed April 8, 1998 (now US Patent No. 6,197,506);
  - 08/670,118, filed June 25, 1996 (now US Patent No. 5,800,992);
  - 08/168,904, filed December 15, 1993 (now abandoned);
  - 07/624,114, filed December 6, 1990 (now abandoned); and
  - 07/362,901, filed December 7, 1989 (now abandoned)to which the above-identified application claims priority under 35 U.S.C. §120.

- [x] Copies of documents that were not submitted in the above-mentioned related United States Patent Applications may be found in related United States Patent Application Nos.:
- 10/098,485, filed March 18, 2002;
- 09/585,557, filed June 2, 2000 (now US Patent No. 6,395,491);
- 09/585,556, filed June 2, 2000 (now US Patent No. 6,544,739);
- 09/585,659, filed June 2, 2000 (now US Patent No. 6,355,432);
- 09/054,420, filed April 3, 1998(now US Patent No. 5,925,525);
- 08/873,034, filed June 11, 1997(now US Patent No. 5,871,928); and
- 08/348,471, filed November 30, 1994 (now US Patent No. 6,420,169)
- Should the Examiner be unable to locate a document, a copy will be provided upon request.
- [ x] Applicants would also like to bring to the Examiner's attention information from Civil Action No. 04-901-JJF in the U.S. District Court for the District of Delaware. Applicants note that this civil action involves multiple patents, including U.S. Patent Nos. 6,355,432 and 6,646,243, owned by the assignee of this application, , and the action is stylized as Affymetrix v. Illumina. Certain non-patent references asserted by Illumina as relevant to the patentability of certain claims of the '531 and '243 patents, which claims are generally directed to collections of encoded beads which have binding polymers of different target specific sequence attached thereto or to substrates comprising beads, spheres or particles comprising nucleic acids attached thereto, have been provided as documents 70-93 in the attached Form 1449. Additionally, the following patent documents were also asserted by Illumina as relevant to the patentability of certain claims of the '531 and 243 patents: EP 392,546, 5,219,763, GB 1561042, 5,028,545, 5,219,763, 5,700,637, 4,877,965, CA 1248873 and 5,348,855, all of which have been cited herein or previously provided in Information Disclosure Statements.
- Should the Examiner wish to review any documents in applicants possession related to this action, the Examiner is invited to contact the undersigned and any documents requested will be forwarded.**
- [x] No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO-1449 are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.

- ☐ Publication(s) \_\_\_ listed on the attached Form PTO-1449 were cited in a foreign search or examination report corresponding to \_\_\_ application serial no. \_\_\_ and mailed on \_\_\_.
- ☐ Enclosed is a copy of a non-English publication(s) \_\_\_. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- ☐ Enclosed is a copy of a non-English publication(s) \_\_\_. English language publication \_\_\_ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) \_\_\_ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) \_\_\_ cited in the attached Form PTO/SB/08A.
- ☒ The Examiner's attention is directed to related co-pending United States Patent Application Serial Nos.:
- 10/098,485, filed March 18, 2002, cited herewith as US 2003/0104411;
- 10/102,774, filed March 22, 2002, cited herewith as US 2002/0192684;
- 10/102,915, filed March 22, 2002, cited herewith as US 2003/0003475;
- 10/098,484, filed March 18, 2002, cited herewith as US 2003/0119011;
- 10/125,428, filed April 19, 2002, cited herewith as US 2002/0155491;
- 10/125,460, filed April 19, 2002, cited herewith as US 2002/0155492;
- 10/125,530, filed April 19, 2002, cited herewith as US 2003/0017484;
- 10/694,541, filed October 28, 2003, cited herewith as US 2004/0067521;
- 10/993,432, filed November 22, 2004, cited herewith as US 2005/0112676;
- 10/992,782, filed November 22, 2004, cited herewith as US 2005/0158743; and
- 10/992,772, filed November 22, 2004, cited herewith as US 2005/0164249

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☒ before the mailing date of a first office action on the merits; or
- ☐ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 50-1283.

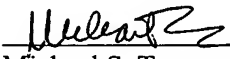
Dated: February 27, 2006

Respectfully submitted,  
**COOLEY GODWARD LLP**

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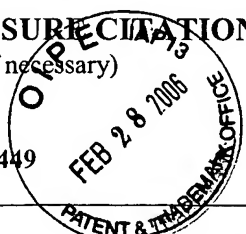
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<b>INFORMATION DISCLOSURE CITATION</b> (Use several sheets if necessary)				<b>Attorney Docket No.</b> AFFY-003/25US		<b>Application No.</b> 10/694,536	
PTO Form 1449				<b>Applicants:</b> Stephen P.A. FODOR <i>et al.</i>		<b>PAGE 1 of 4</b>	
				<b>Filing Date:</b> October 28, 2003		<b>Group Art Unit:</b> 1634	



U.S. PATENT DOCUMENTS							
Initial	Document No.	Date	Name	Class	Sub-Class	Filing Date	
	1.	US 2002/0155491	10/24/2002	Fodor <i>et al.</i>			
	2.	US 2002/0155492	10/24/2002	Fodor <i>et al.</i>			
	3.	US 2002/0192684	12/19/2002	Fodor <i>et al.</i>			
	4.	US 2003/0003475	01/02/2003	Fodor <i>et al.</i>			
	5.	US 2003/0017484	01/23/2003	Fodor <i>et al.</i>			
	6.	US 2003/0104411	06/05/2003	Fodor <i>et al.</i>			
	7.	US 2003/0119011	06/23/2003	Fodor <i>et al.</i>			
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	10.	US 2005/0158743	07/21/2005	Fodor <i>et al.</i>			
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	16.	US 4,258,001	03/24/1981	Pierce <i>et al.</i>			
	17.	US 4,395,486	07/26/1983	Wilson <i>et al.</i>			
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	19.	US 4,595,562	06/17/1986	Liston <i>et al.</i>			
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	25.	US 4,719,087	01/12/1988	Hanaway			
	26.	US 4,806,631	02/21/1989	Carrico <i>et al.</i>			
	27.	US 4,822,681	04/18/1989	Schossler <i>et al.</i>			
	28.	US 4,829,010	05/09/1989	Chang			
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	31.	US 5,139,812	08/18/1992	Lebacq			
	32.	US 5,171,534	12/15/1992	Smith <i>et al.</i>			
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	35.	US 5,432,099	06/11/1995	Ekins			

Examiner	Date Considered
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**Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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<b>PTO Form 1449</b>									
<b>U.S. PATENT DOCUMENTS</b>									
Initial		Document No.	Date	Name	Class	Sub-Class	Filing Date		
	36.	US 5,484,908	01/16/1996	Froehler <i>et al.</i>					
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	39.	US 5,835,404	11/10/1998	Heller <i>et al.</i>					
	40.	US 5,925,525	07/20/1999	Fodor <i>et al.</i>					
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	42.	US 6,103,463	08/15/2000	Chetverin <i>et al.</i>					
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	46.	US 6,395,491	05/28/2002	Fodor <i>et al.</i>					
	47.	US 6,420,169	07/16/2002	Read <i>et al.</i>					
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	49.	US 6,451,536	09/17/2002	Fodor <i>et al.</i>					
	50.	US 6,544,739	04/08/2003	Fodor <i>et al.</i>					
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	58.	EP 0 225 807 A2	06/16/1987	Europe					
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	68.	Avers, C.J., "Information Storage and Flow," p. 111, and "Figure 4-13," p.116, in <i>Molecular and Cell Biology</i> , Addison-Wesley Publ. Co., Reading, MA, (1985).		
	69.	Craig, A.G., <i>et al.</i> , "Labelling oligonucleotides to high specific activity (I)," <i>Nucl. Acids Res.</i> 17(12):4605-4610, IRL Press, Oxford England (1989).		
	70.	Crkvenjakov <i>et al.</i> "Miniaturization of Sequencing by Hybridization (SBH): A Novel Method For Genome Sequencing" abstract no. P37, DOE/NIH Human Genome Contractors/Grantee Workshop (Nov. 1989)		
	71.	Crkvenjakov <i>et al.</i> "Miniaturization of Sequencing by Hybridization (SBH): The 'Sequencing Chip' Concept" 19 pages, (poster).		
	72.	Crkvenjakov, R. and R. Drmanac, "An Integral Approach for Complex Genome Studies," research proposal submitted Office of Health and Environmental Research, U.S. Department of Energy, 54 pages (Oct. 1990)		
	73.	Drmanac, R., <i>et al.</i> , "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing," <i>Science</i> 260:1649-1652, American Association for the Advancement of Science, Washington D.C. (1993)		
	74.	Drmanac, R., <i>et al.</i> , "SBH and the Integration of Complementary Approaches in the Mapping, Sequencing, and Understanding of Complex Genomes," The Second International Conference on Bioinformatics, Supercomputing and Complex Genome Analysis: Proceedings of the June 4-7, 1992 Conference at St. Petersburg Beach, Florida. pp. 121-134, (1993).		
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	76.	Drmanac, R., <i>et al.</i> , "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization," 2 pages.		
	77.	Drmanac, R., <i>et al.</i> , "Sequencing by hybridization: towards an automated sequencing of one million M13 clones arrayed on membranes," <i>Electrophoresis</i> 13:566-573, Verlag Chemie, Weinheim, Germany (1992)		
	78.	Durland, R.H., <i>et al.</i> , "Selective binding of pyrido[2,3-d]pyrimidine 2'-deoxyribonucleoside to AT base pairs in antiparallel triple helices," <i>Bioconjugate Chem.</i> 6:278-282, American Chemical Society, Washington, District of Columbia (1995).		
	79.	Elder, J.K., "Analysis of DNA Oligonucleotide Hybridization Data by Maximum Entropy," pp. 363-371, in <i>Maximum Entropy and Bayesian Methods</i> , eds. Mohammad-Djafari and Demoment, Kluwer, Dordrecht, Germany (1992).		
	80.	Elder, J.K., "Image Processing in Nucleic Acid Sequence Analysis," 166 pages, A thesis submitted for the degree of Doctor of Philosophy, University of Oxford (1993)		
Examiner		Date Considered		
<b>Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.				

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		<b>Filing Date:</b> October 28, 2003	<b>Group Art Unit:</b> 1634	
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)</b>				
	81.	Ellis, R.W., "The Applications of Synthetic Oligonucleotides to Molecular Biology," <i>Pharmaceutical Research</i> 3(4):195-207, Thieme, Stuttgart, Germany (1986).		
	82.	Frischauf, A.M., <i>et al.</i> , "Lambda phage vectors--EMBL series," <i>Methods in Enzymology</i> 153:103-115., Academic Press, New York, New York (1987).		
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	84.	Lennon, G.G. and H. Lehrach, "Hybridization analyses of arrayed cDNA libraries," <i>Trends Genet.</i> 47(10):314-317, Elsevier Science Publishers B.V., Amsterdam, The Netherlands (1991).		
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	86.	Maskos <i>et al.</i> , "A study of oligonucleotide reassociation using large arrays of oligonucleotides synthesized on a glass support," <i>Nucl. Acids Res.</i> 21(20):4663-4669, Oxford University Press, Oxford, England (1993).		
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	88.	McBride, L.J., <i>et al.</i> , "Automated DNA Sequencing Methods Involving Polymerase Chain Reaction," <i>Clin. Chem.</i> 35(11):2196-2201, American Association For Clinical Chemistry, Washington, District of Columbia (1989).		
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	93.	Strezoska, Z., <i>et al.</i> , "DNA sequencing by hybridization: 100 bases read by a non-gel-based methods," <i>Proc. Natl. Acad. Sci. USA</i> 88:10089-10093, National Academy of Sciences, Washington, D.C. (1991)		
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